



Original Research Article

Prevalence of Domestic Accidents in the Rural Field Practice Area of a Medical College, Bellur, Mandya, Karnataka

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ABSTRACT

Background: The danger of accident prevails, not only on roads but also in the home. Among non-infectious causes of ill health one of the main contributors is accidents. Within accidents, domestic accident is gaining more importance. Accidents which takes place in the home or in its immediate surroundings and more generally all accidents not connected with traffic, vehicles or sports are known as domestic accidents.

Objective: To find out the prevalence of domestic accidents in the last one year in the rural field practice area.

Methodology:

Study setting: Rural field practice area of Adichunchanagiri Institute of Medical Sciences (AIMS), Bellur, Mandya.

Study design: A community based Cross sectional study.

Study period: June 2013-Nov 2013.

Study subjects: All children aged above 1years and adults of all the age groups of both the sexes.

Sample size: 200 households consisting of 989 individuals.

Sampling Method: Systematic random sampling

Method of data collection: Structured questionnaire

Statistical analysis: SPSS version16. Results were expressed in percentages/ proportions. Chi –square test was applied.

Results: The prevalence of domestic accidents was 3.2%. The most common domestic accident reported was fall (69%) followed by injuries (22%) and burns (9%). Majority (88%) of the falls were in the age group of 60-80 years. Among the domestic accidents victims, 75% had completely recovered, 15.7% were in the recovery phase and 9.3% had permanent disability.

Conclusion: Falls were the commonest type of domestic accidents and were common in the age group of 60-80 years.

Keywords: Domestic accidents, rural, Karnataka.

INTRODUCTION

The danger of accident prevails, not only on roads but also in the home. Among non-infectious causes of ill health one of the main contributors is accidents. The public health experts have coined the name Modern Day Epidemic to accidents. [1] Within the accidents, domestic accident is gaining more importance among the researchers. By domestic accidents, (DAs) it is meant an accident which takes place in the home or in its immediate surroundings and more generally all accidents not connected with traffic, vehicles or sports. [2] With the advancement of technology, the incidence of domestic accidents is increasing even in the developing countries. [3]

The relationship between domestic accidents and human health is direct and associated with a chain of socio economic consequences. Every domestic accident brings a varying measure of distress (physical and mental) to the victim as well as the family members. The consequences may be disastrous both for an individual and the society when the accident results in permanent disability, as the victim loses his earning capacity and may not be able to enjoy a normal active life. [4] The victim may also suffer premature death.

In developing countries like India, the knowledge about domestic accidents is less. Domestic accidents are an important

public health problem and it is more grave in rural India due to shanty towns and informal dwellings. [5] People from lower socio economic status with underlying medical conditions, living in poor housing conditions and lack of proper safety measures are at higher risk of domestic accidents.

Domestic accident cases are a special group in themselves, reflecting the character and way of living of people. Quite a new pattern of injury attributable to domestic accidents emerges with each technical or cultural change. [6] It has been estimated that applying prevention measures would save almost 10 million pounds per year, highlighting the importance of reducing of these injuries in terms of cost savings. [7,8]

Only a few cross-sectional studies have been conducted focusing on rural communities including Pakistan, [9] India [10] and Ghana [11] showing that domestic accidents possess a potential threat in public health sector.

Hence the present study was conducted to estimate the burden of domestic accidents in a rural community.

MATERIALS AND METHODS

Study area: A community based cross-sectional study was conducted in rural field practice area of Adichunchanagiri Institute of Medical Sciences (AIMS) which includes following health centres.

Table 1: List of Health centres with population coverage.

SL. No.	Health Care Centres	Number of Sub centres	Number of Villages	Population	Number of households
1	A.C Giri Primary Health Centre (PHC)	4	42	11,078	2626
2	Bellur Community Health Centre (CHC)	4	34	18,719	3934
3.	Bindiganaville CHC	4	40	14,150	3219
	Total	12	106	43,947	9779

By simple random sampling, area coming under one health centre (Bellur CHC) was selected out of the three health centres.

Study Period: From June 2013 to November 2013.

Sample size: Sample size was estimated using $n = 4pq/d^2$ formula. [12] After

substituting the prevalence (p) = 9.6%, [13] q=90.4% and allowable error (d) = 1.92, with relative precision of 20 % at 95% confidence interval ($\alpha=0.05$) in the formula, a sample size of 942 was obtained. After adding 5% sample attrition (5% of 942 = 47), final sample size derived was 989.

Sampling technique: Systematic random sampling was done. [14] By considering the average rural household size as 4.1, [15] required number of households were 241 [989/4.1]. Sampling interval was 16 [Total number of households (3934) / required number of households (241)]. In every village first house was selected randomly then every 16th house was selected. Total of 200 households were interviewed to obtain sample size of 989.

Study participants: All children aged above 1 year and adults of all the age groups of both the sexes who were willing to participate in the study were included. Those domestic accidents which have occurred during the last one year, from the date of survey and which have resulted in such damage so that incapacitated them atleast for one day to carry out their routine activities were considered in the study. Those accidents which have occurred within the house or within 25 feet from the house were considered. Accidents which have occurred in the cattle shed, if it is inside the house/ attached to house or within 25 feet from the house were also included in the study.

Data collection tool: Pre- tested semi-structured questionnaire was used for interviewing the participants.

Data analysis: Data was analyzed using SPSS version 16.0. Results were expressed in percentages and proportions. Chi-square test was done to find out the association between domestic accidents and different socio-demographic variables. *p*-value less than 0.05 was considered statistically significant.

RESULTS

Majority (40.2%) of the study participants were in the age group of 20-40 years. Males constitute 50.5% and females 49.5%. Most of them (60%) belong to lower socio- economic class according to modified B.G. Prasad's classification for June 2014. Many (79.1%) of them were literates, followed by illiterates (12.8%) and remaining (8.1%) were children aged 1-6 years. (Table 2)

Table 2: Socio Demographic Profile of Study Participants

Socio-Demographic features	Number (%)
Age groups in Years	
1-20	255 (25.8%)
20-40	398 (40.2%)
40-60	241 (24.4%)
60-80	88 (8.9%)
80-100	7 (0.7%)
Total	989 (100%)
Sex	
Male	499 (50.5%)
Female	490 (49.5%)
Total	989 (100%)
Literacy Status	
Literates	782 (79.1%)
Illiterates	127 (12.8%)
Not applicable (children < 7 years)	80 (8.1%)
Total	989 (100%)
Socio Economic Status	
Upper class	24 (2.4%)
Upper middle class	48 (4.9%)
Lower middle class	108 (10.9%)
Upper lower class	216 (21.8%)
Lower class	593 (60%)
Total	989 (100%)

Prevalence of domestic accidents in the current study was 3.2% (95% CI: 2.08-4.32). Among them, 69% were accidental falls followed by 22% accidental injuries and 9% accidental burns. (Table 3)

Table 3: Distribution of various types of domestic accidents

Domestic Accidents	Number (%)
Accidental Falls	22 (69)
Accidental Injuries (sharp cut injuries)	7 (22)
Accidental Burns	3 (9)
Total	32 (100)

There was high prevalence of accidental falls in the age group of 60-80 years, which was statistically significant with *p* value <0.05. (Table 4)

Table 4: Distribution of accidental falls according to age group.

Age groups (in years)	Accidental Falls		Total
	Yes	No	Frequency
	Frequency (%)	Frequency (%)	(%)
1-20	3 (1.18)	252 (98.82)	255 (100)
20-40	2 (0.50)	396 (99.5)	398 (100)
40-60	8 (3.31)	233 (96.69)	241 (100)
60-80	9 (10.23)	79 (89.77)	88 (100)
80-100	0 (0.00)	7 (100)	7 (100)
Total	22 (15.22)	967 (84.78)	989 (100)

$\chi^2 = 34.11$, $df = 4$, $p = 0.000$

The common place of occurrence of accidental falls was Yard (54.5%), followed by living room (40.9%) and bath room (4.5%). Half of them had grievous injury (restrained from their routine activity or had work loss for more than 3 weeks). Among those who had accidental fall, 78% were completely recovered, 9% were in the recovery phase and 13% had permanent disability in the form of altered gait, immobility of limbs etc. (Table 5)

Table 5: Distribution of accidental falls according to their place of occurrence, severity and the recovery status.

Accidental Falls	Frequency	Percentage
Place of Occurrence		
Yard	12	54.5
Living room	9	41.0
Bath Room	1	4.5
Total	22	100
Severity Grading		
Minor injuries	11	50
Grievous Injuries	11	50
Total	22	100
Recovery Status		
Completely Recovered	17	78
Recovery Phase	2	9
Permanent Disability	3	13
Total	22	100

All the victims of accidental injuries were females and had minor injuries and were completely healed. Accidental burns were exclusively seen among females. They were superficial in the form of scalds and contact burns (due to spillage of hot liquids and contact with hot solids) and were in the healing stage.

In the current study, among the DA victims, 75% had completely recovered, 15.7% were in the recovery phase and 9.3% had permanent disability. Work loss was

more among females than males, which was statistically not significant with p value > 0.05 . (Table 6)

Table 6: Association between work loss due to domestic accidents and sex.

Sex	Work loss		Total
	Yes Frequency (%)	No Frequency (%)	Frequency (%)
Males	7 (58.3)	5 (41.7)	12 (37.5)
Females	11 (55)	9 (45)	20 (62.5)
Total	18 (56.3)	14 (43.7)	32 (100)

$\chi^2 = 0.339$, $df = 1$, $p = 0.854$

DISCUSSION

Prevalence of domestic accidents in the current study was 3.2% which is much lower than the prevalence found in a study conducted in rural community of Bangalore by Masthi et al (9.6%) [13] and higher than in a study done in semi urban community of Gujarat by Bhanderi et al (1.7%) [6] and Haniff et al (2.5%) [16] in Malaysia.

Falls were found to be the commonest type of domestic accidents followed by sharp cut injuries and burns. This is in consistent with the findings of Bhanderi et al, [6] Masthi et al [13] and Chaurasia et al. [17]

In the current study domestic accidents were common among females which are consistent with the studies done by Masthi et al [13] and Bhanderi et al [6] in India and Haniff et al in Malaysia. [16] Accidents were common in the age group of 60-80 years in the present study whereas in Masthi et al, [13] it was common in children aged 1-4 years and in Bhanderi et al [6] among extreme age groups.

In the current study, among the DA victims, 75% had completely recovered, 15.7% were in the recovery phase and 9.3% had permanent disability. Current study showed lower recovery rates and higher disability rates than in the studies done by Masthi et al, [13] where 92% had recovered completely, 6% were in the recovery phase and 2% had permanent disability and

Bhanderi et al [6] where full recovery was observed in 82.6% cases and permanent disability in 2.9% subjects and Neghab et al [3] where permanent disability in only 0.05%.

No death related to domestic accident was reported in the present study. Though Neghab et al [3] reported a mortality rate due to domestic accidents as 1.3%.

CONCLUSION AND RECOMMENDATIONS

Falls were the commonest type of DAs found in the current study. Most of the accidental falls were in the age group of 60-80 years. This may be due to poor vision because of senile cataract, poor balance, underlying medical conditions like osteoporosis/osteoarthritis and unsafe environment such as inadequate illumination, uneven surface etc.

Prevention of domestic accidents must be based on a comprehensive approach that begins with the epidemiological surveillance of the phenomenon. So some of the measures such as giving health education regarding correction of visual impairment, home assessment and environmental modification may help in reducing the incidence of accidental falls and further studies may be conducted on background factors, initiating factors and immediate factors to find out the actual causes behind these accidents.

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